

AMENDMENTS TO THE CLAIMS

1-34. (Canceled)

35. (Previously Presented) A pixel comprising:

a substrate;

a photoconversion device fabricated in said substrate, said device having a charge collection region;

a reset region of a first conductivity type fabricated in said substrate and coupled to said charge collection region, said reset region being configured to apply a reset charge to said charge collection region in response to a pulsed reset signal applied to said reset region;

a pulsed voltage source for providing said pulsed reset signal; and

a capacitor, said capacitor having a first terminal in electrical communication with said pulsed voltage source and a second terminal in electrical communication with said reset region.

36. (Previously Presented) The pixel of claim 35, wherein said reset region functions with said charge collection region as an extended charge collection region, said extended charge collection region being reset by said pulsed reset signal.

37. (Previously Presented) The pixel of claim 36 further comprising:

a source follower transistor for outputting a signal representing charge collected in said extended charge collection region; and

a row select transistor for selectively outputting a signal from said source follower transistor,

wherein said stores charge collected in said charge collection region.

38-39. (Canceled)

40. (Previously Presented) The pixel of claim 35, wherein said first conductivity type is n-type.

41. (Previously Presented) The pixel of claim 37, wherein said charge capacitor has a charge-per-unit area capacitance value of about 5 fF/ μm^2 to about 10 fF/ μm^2 .

42. (Previously Presented) A pixel for use in an imaging device, said pixel comprising:

a charge collection region provided in a substrate;

a reset region provided in said substrate adjacent said charge collection region for periodically resetting a charge level of said charge collection region in response to a reset signal applied to said reset region;

a source follower transistor for outputting a signal representing charge collected in said charge collection region;

a row select transistor for selectively outputting a signal from said source follower transistor;

a pulsed voltage source for providing said reset signal applied to said reset region; and

a capacitor in electrical communication with said pulsed voltage source, said reset region, and said source follower transistor for storing charge collected in said charge collection region.

43. (Previously Presented) The pixel of claim 42, wherein said reset region functions with said charge collection region as an extended charge collection region, and wherein said voltage source periodically supplies said reset signal.

44. (Previously Presented) The pixel of claim 42, wherein said capacitor has a charge-per-unit area capacitance value of about 5 to about 10 fF/ μm^2 .

45. (Previously Presented) The pixel of claim 42, wherein said reset region is doped with an n-type dopant at a first dopant concentration.

46. (Previously Presented) The pixel of claim 45, wherein said capacitor is connected to said reset region through a contact region.

47. (Previously Presented) The pixel of claim 46, wherein said contact region is doped with an n-type dopant at a second dopant concentration.

48. (Previously Presented) The pixel of claim 47, wherein said second dopant concentration is higher than said first dopant concentration.

49. (New) The pixel of claim 37, wherein said charge level of said charge collection region is reset both before and after charge is collected in said charge collection region.

50. (New) The pixel of claim 42, wherein said charge level of said charge collection region is reset both before and after charge is collected in said charge collection region.